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I Claim:

1. Reluctance motor with a stator comprising a three-phase current stator winding with a number of poles for generating a rotary magnetic field and a rotor which is located on a shaft and is made primarily of a ferromagnetic material, the rotor having a predetermined number of angular regions of a like peripheral angular extent which adjoin one another in a circumferential direction of the rotor; wherein the slots of the three-phase current stator windings are partially closed; wherein the stator has a preset number of angular regions of the same peripheral angular extent which adjoin one another in a circumferential direction of the stator; wherein each of the predetermined number of angular regions of the rotor has at least one pair of flux guidance regions facing the stator, the flux guidance regions having flux guidance properties which differ in a main direction of the rotary magnetic field; wherein each of the preset number of angular regions of the stator has at least one pair of flux guidance regions facing the rotor which have flux guidance properties which differ in the main direction of the rotary magnetic field; wherein the flux guidance regions with low magnetic resistance of the stator are located radially inwardly of the partially closed slots; and wherein the preset number of angular regions on the stator differs from the predetermined number of angular regions on the rotor by an integral multiple of the number of poles of the three-phase current stator winding.

2. Reluctance motor according to claim 1, wherein the preset number of angular regions on the stator differs from the predetermined number of angular regions on the rotor by the simple pole number.

3. Reluctance motor as claimed in claim 1, wherein the flux guidance regions of different flux guidance properties are formed alternately by air and the ferromagnetic material of at least one of the stator and the rotor.

4. Reluctance motor as claimed in claim 3, wherein the three-phase current stator winding has a number of slots; and wherein the number of angular regions of the stator corresponds to the number of slots provided in the three-phase current stator winding.

5. Reluctance motor as claimed in claim 1, wherein the three-phase current stator winding has 2 poles.

6. Reluctance motor as claimed in claim 1, wherein the three-phase current stator winding has 4 poles.

7. Reluctance motor as claimed claim 1, wherein the number of angular regions on the stator and on the rotor is greater than the number of poles of the three-phase current winding.

8. Reluctance motor as claimed in claim 1, wherein the number of angular regions on the stator and on the rotor is greater than the number of poles of the three-phase current winding by a factor of at least 5.

9. Reluctance motor as claimed in claim 1, wherein the flux guidance regions of the stator have a width which corresponds to widths of the flux guidance regions of the rotor.

10. Reluctance motor as claimed in claim 1, wherein the stator and the rotor each have at least one additional layer of flux guidance region pairs with flux guidance properties which differ alternately in the main direction of the rotary field; and wherein the at least one additional layer of the stator and the rotor alternate with each other in succession.

11. Reluctance motor as claimed in claim 10, wherein the preset number of angular regions on the stator differs from the predetermined number of angular regions on the rotor by the simple pole number.

12. Reluctance motor as claimed in claim 1, wherein flux guidance regions of at least one of the stator and the rotor are located in an immediate vicinity of return elements of the said at least one of the stator and the rotor, are made of ferromagnetic material and are roughly half as high as wide in the main direction of the rotary field.

13. Reluctance motor as claimed in claim 1, wherein the rotor is external of the stator.

14. Reluctance motor as claimed in claim 1, wherein the flux guidance regions of different flux guidance properties are formed by permanent magnets which are located on one of the stator and the rotor, and which are polarized oppositely in the main direction of the rotary field.

15. Reluctance motor as claimed in claim 14, wherein the preset number of angular regions on the stator differs from the predetermined number of angular regions on the rotor by the simple pole number of the three-phase current stator winding.

16. Reluctance motor as claimed in claims 15, wherein flux guidance regions of at least one of the stator and the rotor are located in an immediate vicinity of return elements of the said at least one of the stator and the rotor, are made of ferromagnetic material and are roughly half as high as wide in the main direction of the rotary field.

17. Reluctance motor as claimed in claim 1, wherein bars of a squirrel-cage damper winding run in recesses in the ferromagnetic material of the rotor to form flux guidance regions of low magnetic permeability.

18. Reluctance motor as claimed in claim 1, wherein the flux guidance regions of ferromagnetic material are formed of stacked electric steel sheets which are insulated from one another.

19. Reluctance motor as claimed in claim 1, wherein the flux guidance regions of at least one of the stator and the rotor extend in a direction which is inclined relative to a direction of rotation of the rotor.

20. Reluctance motor as claimed in claim 1, wherein the stator and the rotor include a radial air gap.

21. Reluctance motor as claimed in claim 1, wherein a transducer or a resolver is located on the shaft.

22. Reluctance motor with a stator comprising a three-phase current stator winding with a number of poles for generating a rotary magnetic field and a rotor which is located on a shaft and is made primarily of a ferromagnetic material, the rotor having a predetermined number of angular regions of a like peripheral angular extent which adjoin one another in a circumferential direction of the rotor; wherein the stator has a preset number of angular regions of the same peripheral angular extent which adjoin one another in a circumferential direction of the stator; wherein each of the predetermined number of angular regions of the rotor has at least one pair of flux guidance regions facing the stator, the flux guidance regions having flux guidance properties which differ in a main direction of the rotary magnetic field; wherein each of the preset number of angular regions of the stator has at least one pair of flux guidance regions facing the rotor which have flux guidance properties which differ in the main direction of the rotary magnetic field; wherein the preset number of angular regions on the stator differs from the predetermined number of angular regions on the rotor by an integral multiple of the number of poles of the three-phase current stator winding; wherein a reduction rotor is provided floating on the shaft between the stator and rotor; wherein the reduction rotor has a predetermined number of angular regions of the same peripheral angle which adjoin one another in the circumferential direction on a surface facing the stator and each of which have a pair of flux guidance regions with flux guidance properties which differ in the main direction of the rotary field; and wherein the reduction rotor, on a surface facing the rotor, has a preset number of angular regions of the same angular extent which adjoin one another in the circumferential direction and each of which has a pair of flux guidance regions with flux guidance properties which differ in the main direction of the rotary field; and wherein the number of angular regions on the stator differs from the number of angular regions on the surface of the reduction rotor facing the stator to the same extent that the number of angular regions on the surface of the reduction rotor facing the rotor differs from the number of angular regions on the rotor and is equal to an integral multiple of the pole number of the three-phase current stator winding.

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23. Reluctance motor comprising a stator, which has a three-phase current stator winding for generating a rotary magnetic field, a shaft and a rotor which is located on the shaft and which is made primarily of a ferromagnetic material, said rotor having a predetermined number of angular regions of a like peripheral angle which adjoin one another in a circumferential direction; wherein the rotor has flux guidance regions and connecting elements for connection to the shaft;

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and wherein a flux guidance rotor is provided which floats on the shaft and which is made of a ferromagnetic material for returning of lines of force of the rotary field.

24. Reluctance motor as claimed in claim 23, wherein the rotor is internal of the stator; wherein the rotor is in the form of a hollow cylinder; and wherein the flux guidance rotor is located within the hollow cylinder of the rotor and is a solid cylinder supported to float relative to the shaft via bearings.

25. Reluctance motor as claimed in claim 23, wherein bars of a squirrel-cage damper winding run in recesses in the ferromagnetic material of the rotor to form flux guidance regions of low magnetic permeability.

26. Reluctance motor as claimed in claim 23, wherein the flux guidance regions are formed of stacked sheets of ferromagnetic, electric steel sheets which are insulated from one another.

27. Reluctance motor as claimed in claim 23, wherein the flux guidance regions extend in a direction which is inclined relative to a direction of rotation of the rotor.

28. Reluctance motor as claimed in claim 23, wherein the stator and the rotor include a radial air gap.

29. Reluctance motor as claimed in claim 23, wherein a transducer or a resolver is located on the shaft.